

(No Model.)

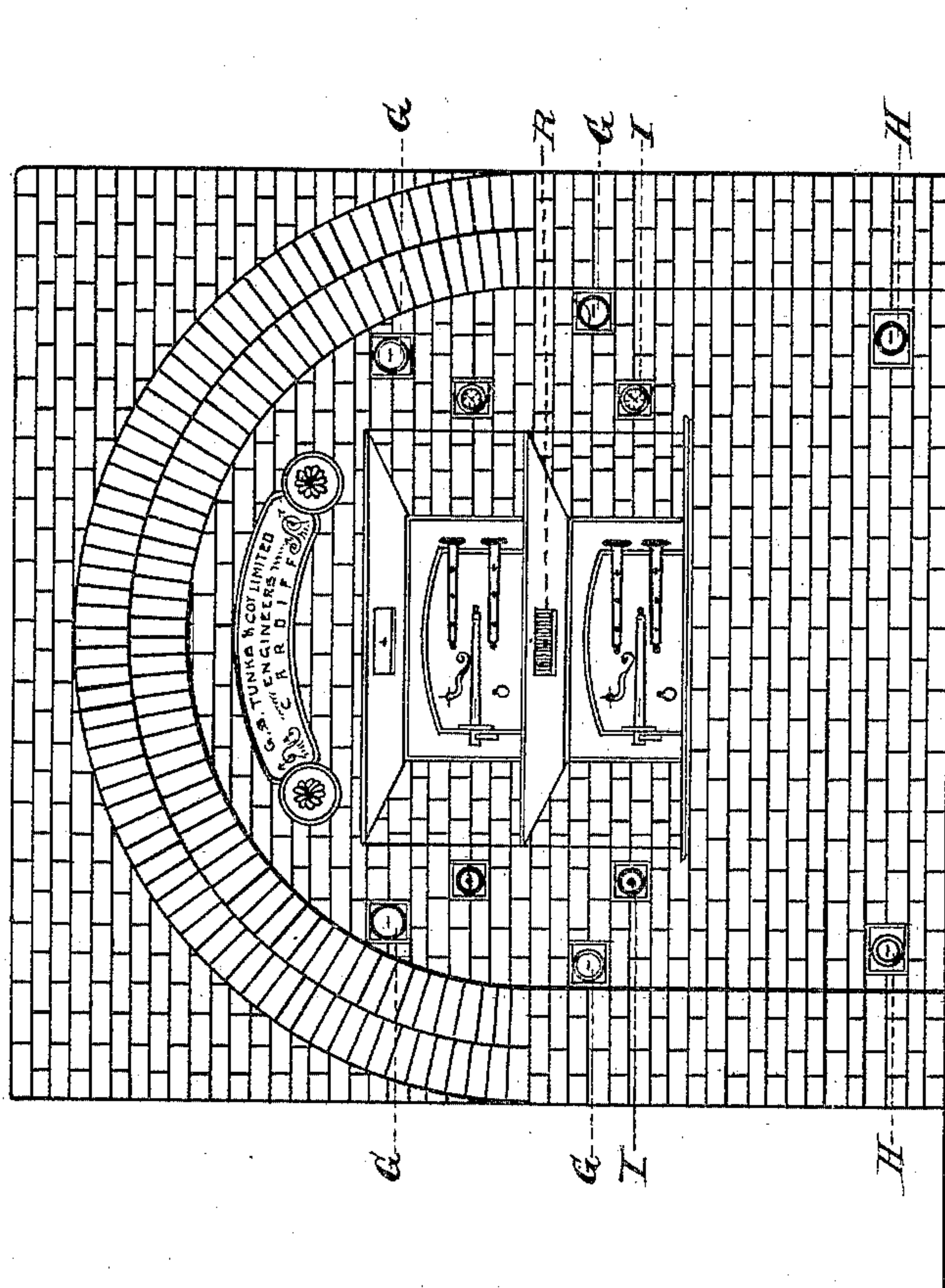
6 Sheets—Sheet 1.

G. S. TUNKS.
CONSTRUCTION OF BAKERS' OVENS.

No. 445,826.

Patented Feb. 3, 1891.

Fig. 1.



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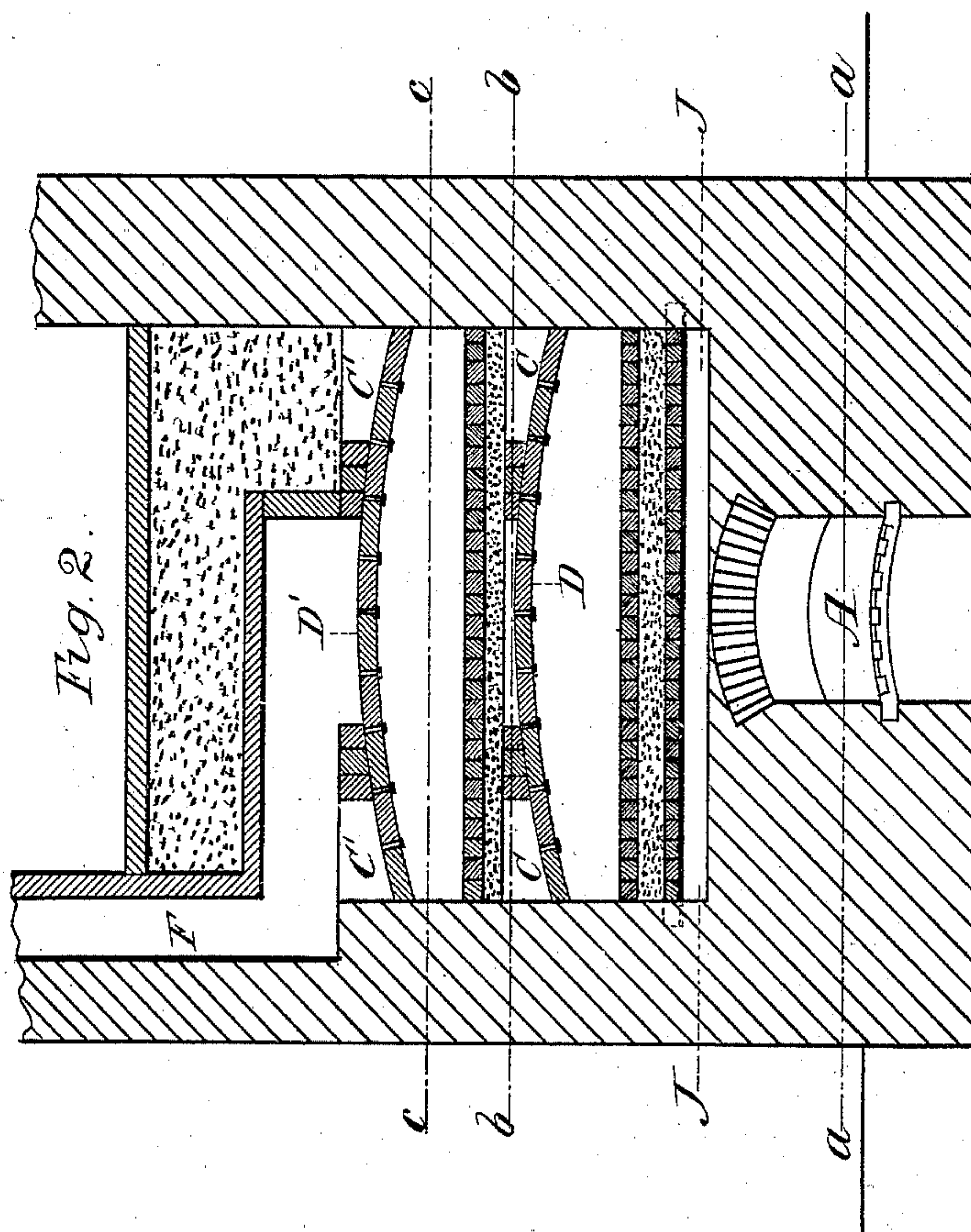
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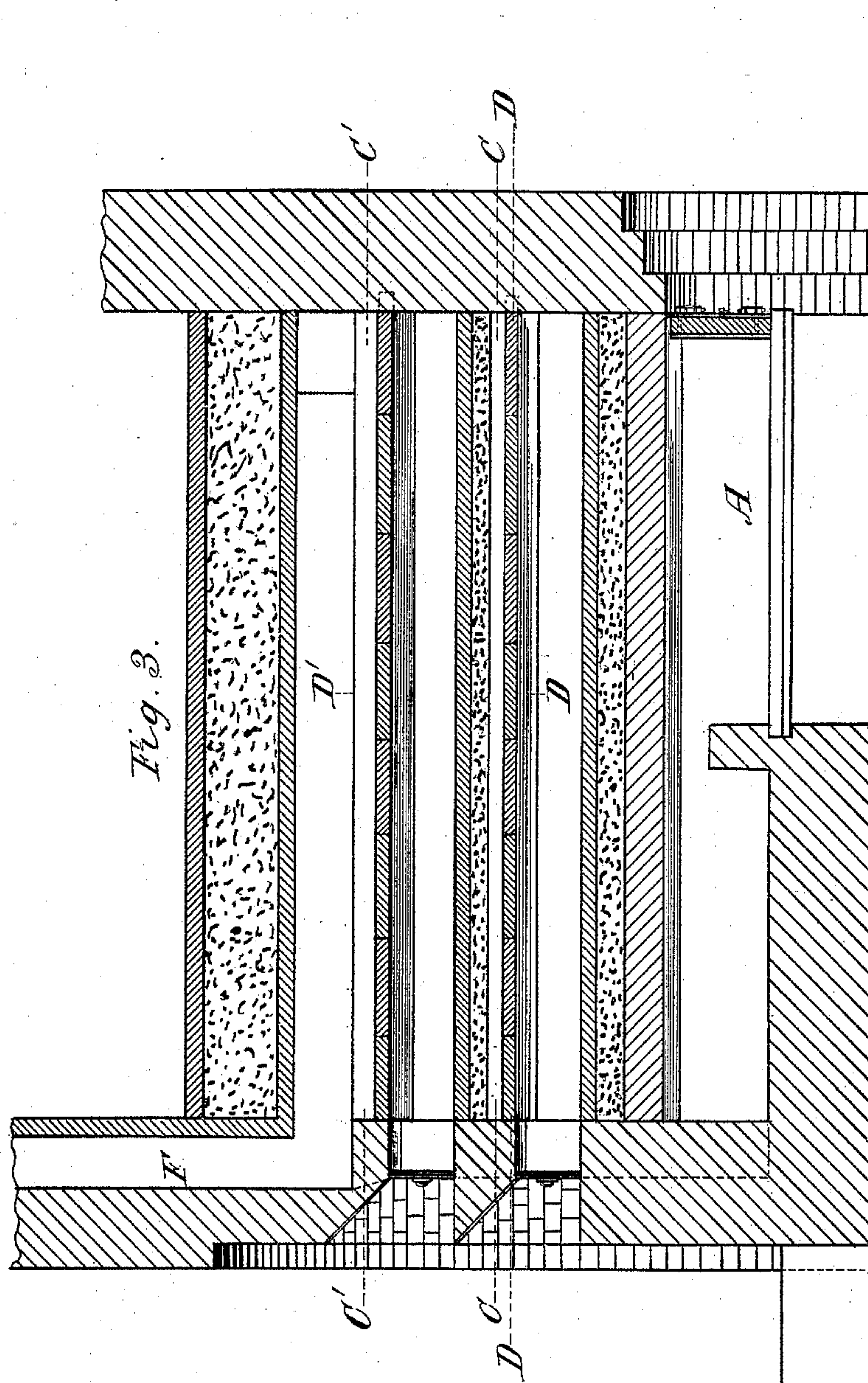
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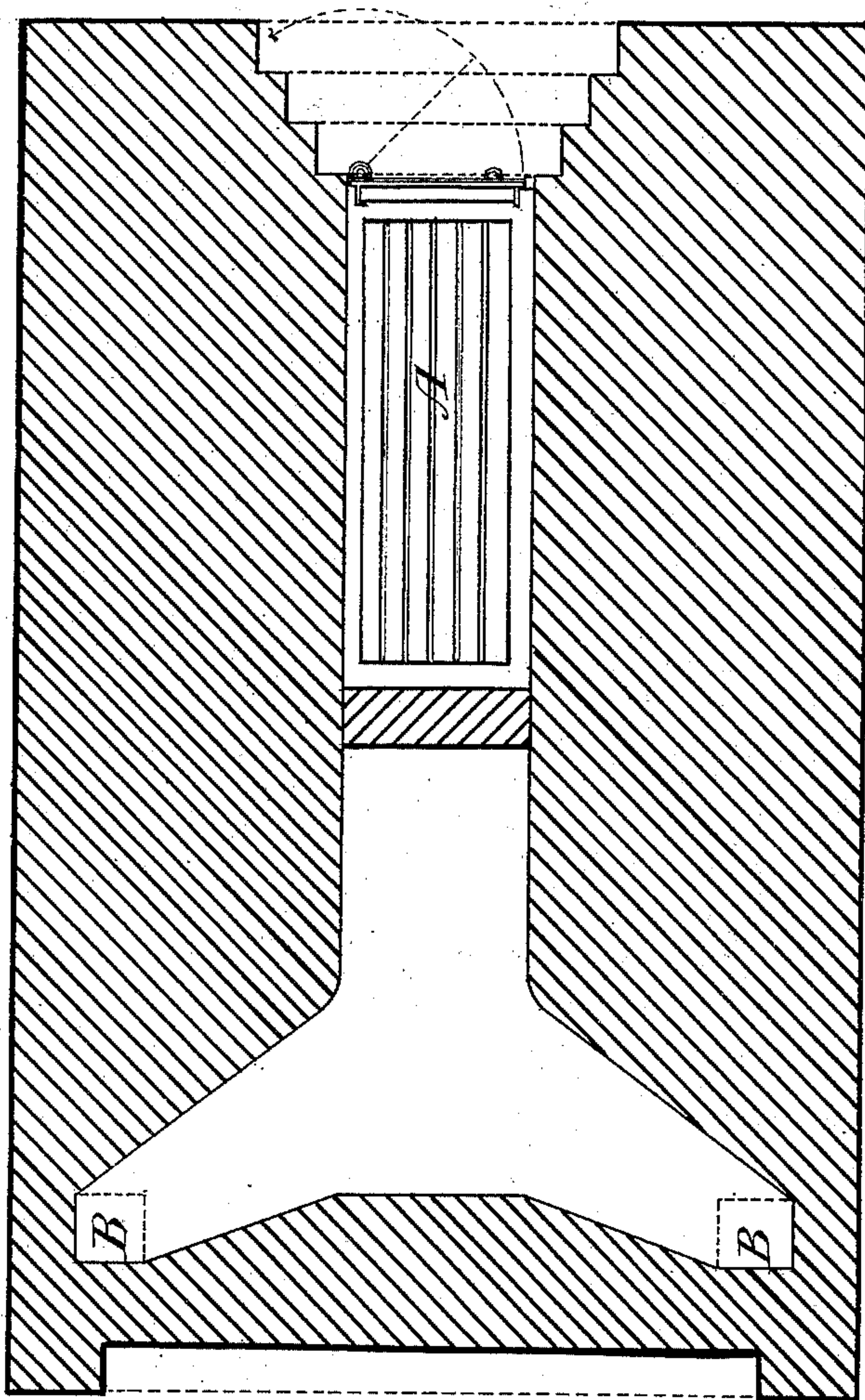
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Fig. 4.



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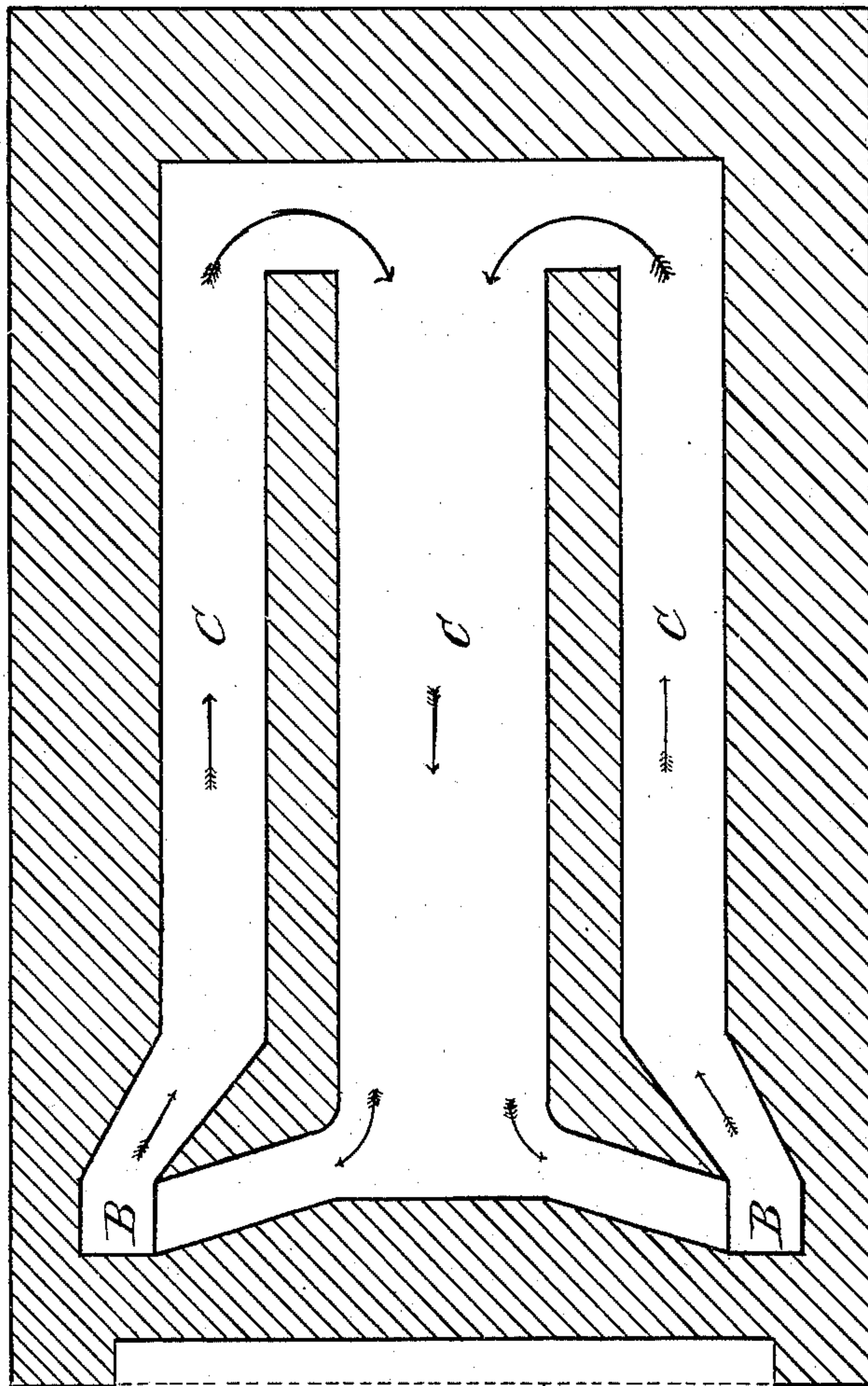
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Fig. 5.



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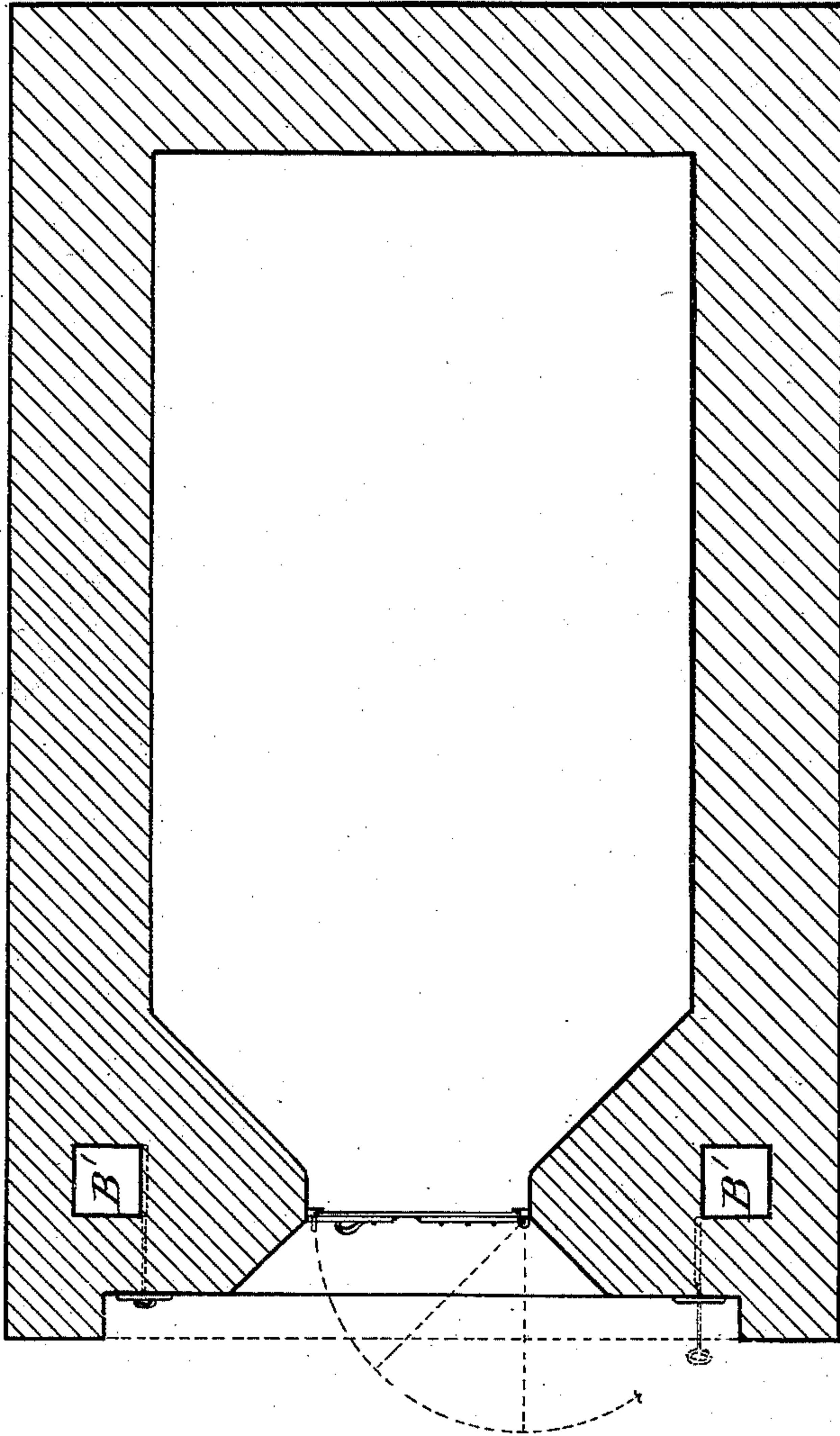
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Fig. 6.



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UNITED STATES PATENT OFFICE.

GILBERT SAMUEL TUNKS, OF CARDIFF, ENGLAND.

CONSTRUCTION OF BAKERS' OVENS.

SPECIFICATION forming part of Letters Patent No. 445,826, dated February 3, 1891.

Application filed May 6, 1890. Serial No. 350,835. (No model.) Patented in England June 4, 1888, No. 8,092, and December 18, 1888, No. 18,443.

To all whom it may concern:

Be it known that I, GILBERT SAMUEL TUNKS, a subject of the Queen of Great Britain and Ireland, residing at Cardiff, Kingdom of Great Britain and Ireland, have invented certain new and useful Improvements in the Construction of Bakers' Ovens, (for which I have obtained Letters Patent in Great Britain, No. 18,443, bearing date December 18, 1888, and No. 8,092, bearing date June 4, 1888,) of which the following is a specification.

This invention is designed to provide a more effective distribution of heat in bakers' decker ovens and to effect economy in fuel consumed therein, and also to reduce cost in building.

According to this invention the products of combustion from the furnace of the lower oven are conducted by vertical passages to the space above the crown of the said lower oven and thence, after traversing horizontal flues provided therefor above the said crown and below the bottom of the oven next above, are discharged through the chimney; or, if the structure has two or more "decks," the heated air is further conducted from above the crown of the first to flues over the crown of the second, and so on to the next deck above and thence to the chimney. Moreover, I provide a chamber for the admission of cold air between the crown of the furnace and the bottom of the lower baking-oven to moderate the heat, which in bakers' ovens of the usual construction is in that region excessive.

In the accompanying drawings, Figure 1 represents an end view of a baker's oven having two decks or ovens built one over the other and in accordance with my said invention. Fig. 2 is a transverse vertical section; Fig. 3, a longitudinal vertical section; Fig. 4, a sectional plan on the line *aa*, Fig. 2. Fig. 5 is a sectional plan on the line *bb*, Fig. 2, and Fig. 6 a similar view on the line *cc*, Fig. 2.

The heated air from the furnace A is conducted by the vertical flues B to the horizontal flues C above the crown D of the lower oven. After passing along the flues C, as indicated by the arrows shown at Fig. 5, the heated air is conducted by vertical flues B', similar to the flues B, to the horizontal flues C', similar to the flues C, situated above the crown D' of the upper oven, and after trav-

eling along these flues is discharged through the chimney F.

Dampers are indicated by the letter G, soot-boxes by H, and pyrometers by I.

If the oven have more decks than those shown in the drawings, the hot air is conducted to each by further flues arranged similarly to those shown. By virtue of this arrangement of vertical and horizontal flues a more complete and effective distribution of heat from the furnace is obtained and the arrangement admits of the construction of larger flues than hitherto used, there being more flue-space and less brick-work.

Above the furnace-chamber and between it and the floor of the lower oven is a space J, to which cold air is admitted through a grating R. This grating is provided with a grid-iron sliding door similar to those used in regulating the draft in stoves, and the supply of air should be regulated to suit the heat of the fire. Although the chamber J is closed to the outer air except through the grating R, the strata of air within the said chamber have such a difference of temperature and air expands so rapidly when heated that an outflow of light and heated air will take place at the upper portion of the said grating and an inrush of cold and heavier air at the lower portion thereof, and thus a continuous circulation of air will take place, the air never attaining that excessively high temperature common in bake-ovens having an air-space similar to mine but closed. By this means the floor of the lower oven is kept at such a temperature as to obviate burning of loaves placed upon it.

What I claim is—

In a baker's oven, the combination of two or more decks having the furnace-doors at one end and the oven-doors at the other end thereof, with vertical flues at the corners thereof leading upward from the rear end of the furnace, with side passages leading from each of said vertical flues between the top of the lower oven and the bottom of the oven above and separated by a wall from a central return-passage, also situated between the two ovens and receiving the products of combustion from both of said side passages and carrying them to vertical flues over but separated from the first vertical flues, all of said

flues having dampers therein, and thence by similar passages under each oven to the top oven, where the products of combustion, emptying into one chamber, flow over the said
5 oven and finally escape into the smoke-stack, and said lower oven having an air-space between the roof of the furnace and the bottom thereof, with an opening for admitting and dampers for regulating the supply of cold

air therein, whereby the bottom of said oven is prevented from being overheated, substantially as described.

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